

Application No. 10/518,886
Docket No. 2002B096/2
Reply to OA of September 19, 2006
Amendment dated December 18, 2006

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REMARKS

This reply is in response to the Office Action dated September 19, 2006. By this amendment, claims 1, 9, 12, 13, 24, 35 and 36 are amended; claims 51-52 are new. Claims 1-7, 9-33, and 35-52 are pending in the application and stand rejected. Entry of the foregoing amendment and reconsideration of the claims are respectfully requested.

Claims 1 and 24 have been amended to the transitional phrase "consisting essentially of" to exclude the presence of ingredients contrary to the invention, especially naphthenic and aromatic processing oils. See the specification in the last three sentences at paragraph [0065]. Claim 9 has been amended for consistency. Claims 12-13 and 35-36 are amended to clarify that the blend components are in addition to the elastomer, and claims 51 and 52 are presented to recognize that the species deleted from claims 12-13 and 35-36 read on the elastomer. No new matter is presented by these amendments.

Claims 1-7 and 9-18, 20-33, 35-41 and 43-50 stand rejected under 35 U.S.C. § 102(a or e), as being anticipated by Tsou et al. (either US 6,875,813 or WO 200157340) hereafter "Tsou."

To anticipate the claims, the prior art reference must disclose every recited element. It is not enough that the reference might have by chance inherently obtained the claimed composition under certain circumstances; rather, the claimed composition must *necessarily* be obtained by the reference. Tsou fails to specifically disclose elastomer/plastomer/oil compositions that exclude naphthenic/aromatic oils (claim 1); fails to specifically disclose air barrier compositions consisting essentially of elastomer, plastomer and polybutene oil (claim 24); and fails to disclose the specific formulation of 5-25 phr polybutene oil, halogenated star-branched butyl rubber, 5-25 phr natural rubber and 5-25 phr plastomer (claim 48). Respectfully, Tsou does not fully anticipate any of the pending independent claims as required, and the 102 rejection should be withdrawn.

Regarding obviousness, a *prima facie* rejection requires three basic criteria. First, there must be some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or suggest all

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the claim limitations. See MPEP 2143. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *Id.*, citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). A *prima facie* case of obviousness can be rebutted by evidence showing that the claimed invention possesses improved properties not expected by the prior art. See MPEP 2142.

Applicant respectfully traverses the obviousness rejection based on Tsou. The amended claims overcome the rejection because Tsou does not teach, show, or suggest a composition suitable for an air barrier consisting essentially of an elastomer, processing oil and plastomer, wherein the plastomer is a copolymer of ethylene derived units and C₃ to C₁₀ α -olefin derived units, has a density of less than 0.915 g/cm³, and a brittleness value of less than -41.0°C, wherein naphthenic and aromatic processing oils are substantially absent from the composition, as recited in claim 1 and those dependent therefrom. Similar limitations are seen in the specific parameters of claims 24 and 48.

Indeed, Tsou teaches explicitly at (column/line in US6875813) 11/53-55 that the oil level should be reduced in order to improve air impermeability in air barrier applications, recognizing that there is a trade off between processability/plasticization on the one hand (more oil) and air impermeability on the other (more oil is undesirably more permeable). Tsou reiterates the prior art understanding that oils, as well as plastomers and natural rubber, all tend to adversely impact air impermeability. All of the Tsou data in the examples are based on paraffinic processing oil. Comparing the air permeability data in Table 5 of Tsou, the air permeability is worse (increased) when natural rubber is added (sample blend 2) and when plastomer is added (sample blends 3-6) to a stock blend based on paraffinic processing oil.

Despite the understanding of the skilled artisan, applicant unexpectedly discovered that this is not true when employing a combination of plastomer with processing oils that are not aromatic or naphthenic, in a butyl type rubber that can even also include a natural rubber blend component (see claims 12-13, 35-36 and 48 for the unexpected ability to include natural rubber, compare Tsou sample blend 2). In Table 6 in the specification, the combination of EXACT plastomer/PARAPOL polybutene oil in composition 5 is dramatically and quite unexpectedly reduced compared to the plastomer alone (compositions 3 and 4) and the plastomer/naphthenic oil combination (composition 2).

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The assertion in the office action that the expectation of improved processability alone would provide motivation for the alleged modification of Tsou is contrary to the record. The art recognized that commercial applicability requires that the cured elastomer have desirable properties as well as processability. One would not be lead to improve processability alone where the end properties (air permeability) are clearly expected to be worse. Tsou teaches away from the discovery of applicant and thus provides no motivation for the modification asserted, nor a reasonable expectation of success. Even if it did, applicant's data clearly demonstrate the unexpected nature of the properties of the claimed composition. Accordingly, withdrawal of the 103 rejection over Tsou is respectfully requested.

Claims 1-7 and 9-50 also stand rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-24 of Tsou. For reasons discussed above, Tsou does not teach, show or suggest the claimed invention as amended and therefore, none of claims 1-52 are anticipated by or obvious over the claims of Tsou. Accordingly, a rejection on the grounds of nonstatutory obviousness-type double patenting should be withdrawn. Withdrawal of the rejection and allowance of the claims 1-7 and 9-50 are respectfully requested.

Claims 1-7, 9-10, and 24-50 also stand rejected under 35 U.S.C. § 103(a), as being unpatentable over Simonutti et al (US 6,030,304) in view of Coran (US 4,130,534).

The Office Action acknowledges that Simonutti does not disclose or suggest a processing oil. Yet, the Office Action asserts that because Coran "discloses an elastomeric composition and that extender oil is 'desirable' to improve processability and other properties," it would have been obvious to use extender oil as taught by Coran "to improve properties."

Applicants respectfully traverse the rejection on grounds that a combination of the references does not teach, show, or suggest the claimed invention. The motivation suggested in the Office Action is to improve processability by "adding extender oil to an elastoplastic composition." However, as demonstrated by Tsou, improving processability would be expected to decrease air impermeability. Indeed, Tsou squarely teaches more processability from oil addition results in worse air permeability, and demonstrates the trend of increased air permeability from more plastomer as shown in Table 5 of Tsou. Applicants demonstrated the exact opposite trend of increasing air impermeability (decreasing trend of

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air permeability) as shown in Table 6 of the application with similar green strength (see Table 5 of the application). Indeed, the air permeability decreased from 4.53 to 2.45 $\text{cm}^3\text{-cm/cm}^2\text{-sec-atm}$ ($\times 10^8$).


The asserted modification of Simonutti/Coran fails to obtain applicant's claimed invention to exclude naphthenic/paraffinic/aromatic oils (claim 1), and moreover these references fail to provide any motivation for the alleged modification, fail to prove reasonable expectation of success, and clearly do not controvert the unexpected nature of the discovery that air barrier and other properties are dramatically improved in applicant's invention.

Applicants respectfully submit that withdrawal of the rejection over Simonutti and Coran and allowance of the claims is appropriate.

Having addressed all issues set out in the office action, Applicant respectfully submits that the pending claims are now in condition for allowance. Applicant invites the Office Action to telephone the undersigned attorney if there are any issues outstanding which have not been addressed to the Office Action's satisfaction. It is believed this response is timely filed and additional claim fees are due; however, the Commissioner is hereby authorized to charge counsel's Deposit Account No. 05-1712, for any fees, including extension of time fees or excess claim fees, required to make this response timely and acceptable to the Office.

Respectfully submitted,

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Date


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